

In the claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (previously presented and currently amended): An isolated nucleic acid ~~obtainable~~ obtained from the FRI locus of a plant, which nucleic acid encodes a polypeptide which ~~is capable of specifically altering the~~ delays flowering time of a plant into which the nucleic acid is introduced ~~extending~~ and thereby extends a vegetative phase in the plant.

Claim 2 (previously presented and currently withdrawn): A ~~nucleic acid as claimed in claim 1 which is capable of delaying the flowering time and thereby extending the vegetative phase in the plant.~~

Claim 3 (previously and currently amended): A nucleic acid as claimed in claim 1 which comprises an FRI nucleotide sequence which encodes the polypeptide of ~~Fig 6~~ SEQ ID NO:1.

Claim 4 (previously amended and currently amended): A nucleic acid as claimed in claim 3 wherein the FRI nucleotide sequence consists of ~~any of:~~

~~(i) the sequence of Fig 4 (SEQ ID NO:2);~~

~~(ii) the sequence of Fig 5 (SEQ ID NO:3);~~

~~(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);~~

the sequence of SEQ ID NO:2 or is degeneratively equivalent to ~~any of these~~ said sequence.

Claim 5 (previously amended under Article 34 and currently amended): An isolated nucleic acid which comprises a variant sequence which is a ~~homeologous~~ variant of the FRI nucleotide sequence of claim 4 and which shares at least about 60% 90% identity therewith, wherein said nucleic acid ~~being capable of specifically altering~~ delays flowering time of a plant into which the nucleic acid is introduced.

Claim 6 (previously presented and currently withdrawn): A nucleic acid as claimed in claim 5 wherein the variant sequence encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

Claim 7 (previously amended): A nucleic acid as claimed in claim 5 wherein the variant sequence is an FRI allele.

Claim 8 (previously and currently amended): A nucleic acid as claimed in claim 5 wherein the variant sequence is an FRI orthologue ~~obtainable~~ obtained from a plant species other than *Arabidopsis thaliana*.

Claim 9 (previously and currently amended): A nucleic acid as claimed in claim 5 wherein the variant sequence is a derivative of the FRI nucleotide sequence ~~selected from the group consisting of any of:~~

~~(i) the sequence of Fig 4 (SEQ ID NO: 2);~~

~~(ii) the sequence of Fig 5 (SEQ ID NO: 3);~~

~~(iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO: 3);~~

of SEQ ID NO:2 or is degeneratively equivalent to said sequence ~~any of these. by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence.~~

Claim 10 (previously and currently amended): An isolated nucleic acid which comprises a sequence which is the complement of the FRI ~~or variant~~ nucleotide sequence of claim 1.

Claim 11 (previously presented and currently withdrawn): An isolated nucleic acid for use as a probe or primer, said nucleic acid have a sequence of at least about 16-24 nucleotides in length, which sequence is present in either the FRI nucleotide sequence of claim 4 or the complement thereof.

Claim 12 (previously amended and currently withdrawn): A process for producing a nucleic acid as claimed in claim 9 which process comprises the step of modifying a FRI nucleotide sequence selected from the group consisting of any of:

- (i) the sequence of Fig 4 (SEQ ID NO:2);
- (ii) the sequence of Fig 5 (SEQ ID NO:3);
- (iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);

or is degeneratively equivalent to any of these by way of one or more of addition, insertion, deletion or substitution of the FRI nucleotide sequence.

Claim 13 (previously amended and currently withdrawn): A method for identifying or cloning a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced, which method employs a probe or primer of claim 11.

Claim 14 (previously amended and currently withdrawn): A method for determining the presence of a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable specifically altering the flowering time of a plant into which the nucleic acid is introduced within the genetic context of a plant, which method employs a probe or primer of claim 11.

Claim 15 (previously amended and currently withdrawn): A method as claimed in claim 14, which method comprises the steps of:

- (a) providing a preparation of nucleic acid from a plant cell;
- (b) providing a nucleic acid molecule which is a probe or primer, said nucleic acid having a sequence of at least about 16-24 nucleotides in length, which sequence is present in either the FRI nucleotide sequence or a complement thereof and selected from the group consisting of any of:
 - (I) the sequence of Fig 4 (SEQ ID NO:2);
 - (ii) the sequence of Fig 5 (SEQ ID NO:3);
 - (iii) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);or is degeneratively equivalent to any of these,
- c) contacting nucleic acid in said preparation with said nucleic acid molecule under conditions for hybridization, and,
- (d) identifying a nucleic acid variant if present by its hybridisation with said nucleic acid molecule.

Claim 16 (previously amended and currently withdrawn): A method as claimed in claim 14, which method comprises the steps of:

- (a) providing a preparation of nucleic acid from a plant cell;

- (b) providing a pair of nucleic acid molecule primers suitable for PCR, at least one of said primers being a primer, said primer having a sequence of at least about 16-24 nucleotides in length, which sequence is present in either the FRI nucleotide sequence or a complement thereof and selected from the group consisting of any of:
- (I) the sequence of Fig 4 (SEQ ID NO:2);
 - (II) the sequence of Fig 5 (SEQ ID NO:3);
 - (III) bases 362-2188 inclusive of Fig 5 (SEQ ID NO:3);
- or is degeneratively equivalent to any of these
- c) contacting nucleic acid in said preparation with said primers under conditions for performance of PCR,
- (d) performing PCR and determining the presence or absence of an amplified PCR product.

Claim 17 (previously presented and currently withdrawn): A method of selecting a plant having a desired allele of the FRI gene, which employs a probe or primer of claim 11 as a marker.

Claim 18 (previously amended): A recombinant vector which comprises the nucleic acid of claim 1.

Claim 19 (previously amended and currently withdrawn): A vector as claimed in claim 18 wherein the nucleic acid comprised in the vector is further capable of modulating VRN2 and/or FLC expression in a plant in which nucleic acid is transcribed.

Claim 20 (previously amended): A vector as claimed in claim 18 wherein the nucleic acid is operably linked to a promoter for transcription in a host cell, wherein the promoter is optionally an inducible promoter.

Claim 21 (previously amended): A vector as claimed in claim 18 which is a plant vector.

Claim 22 (previously amended): A method which comprises the step of introducing the vector of claim 18 into a host cell, and optionally causing or allowing recombination between the vector and the host cell genome such as to transform the host cell.

Claim 23 (previously and currently amended): A host cell ~~containing or~~ transformed with a heterologous nucleic acid of claim 1.

Claim 24 (previously presented and currently amended): A host cell as claimed in claim 23 which is a plant cell ~~, optionally present in a plant.~~

Claim 25 (previously presented and currently amended): A method for producing a transgenic plant, which method comprises the steps of:

- (a) performing a method as claimed in claim 22, and
- (b) regenerating a plant from the transformed plant cell.

Claim 26 (previously and currently amended): A transgenic plant which is ~~obtainable~~ obtained by the method of claim 25, ~~or which is a clone, or selfed or hybrid progeny or other descendent of said transgenic plant, progeny thereof~~ which includes the plant cell transformed with a heterologous nucleic acid obtained from the FRI locus of a plant, which nucleic acid encodes a polypeptide which delays flowering time of a plant into which the nucleic acid is introduced.

Claim 27 (previously and currently amended): A plant as claimed in claim 26 which is selected from the group consisting of: sugar beet; a Brassica ssp. such as cauliflower, broccoli, cabbage, spinach, curly kale, *B. Napus*; potato; lettuce; ~~and~~ a culinary herb.

Claim 28 (previously and currently amended): A part ~~ex~~ of a propagule from a plant as claimed in claim 26.

Claim 29 (previously amended and currently withdrawn): An isolated polypeptide which is encoded by the FRI nucleotide sequence of claim 1.

Claim 30 (previously presented and currently withdrawn):

Claim 31 (previously amended and currently withdrawn): A polypeptide as claimed in claim 29 which is a fragment of the polypeptide of Figure 6 (SEQ ID NO:1).

Claim 32 (previously amended and currently withdrawn): A method of making the polypeptide of claim 29, which method comprises the step of causing or allowing expression from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in a suitable host cell.

Claim 33 (previously presented and currently withdrawn): An antibody having specific binding affinity for the polypeptide of claim 30.

Claim 34 (previously amended and currently withdrawn): A polypeptide which comprises the antigen-binding site of the antibody of claim 33.

Claim 35 (previously and currently amended): A method for ~~influencing or effecting~~ delaying or accelerating flowering time in a plant, which method comprises the step of causing or allowing expression of a nucleic acid ~~obtainable~~ obtained from the FRI locus of a plant, which nucleic acid encodes a polypeptide which ~~is capable of specifically altering~~ delays flowering time of a plant into which the nucleic acid is introduced within the cells of the plant, following an earlier step of introducing the nucleic acid into a cell of the plant or an ancestor thereof.

Claim 36 (previously and currently amended): A method as ~~claimed in claim 35~~ for delaying flowering time in a plant, wherein the nucleic acid ~~which~~ comprises an FRI nucleotide sequence which encodes the polypeptide of ~~Fig. 6~~ of SEQ ID NO:1.

Claim 37 (previously amended and currently withdrawn): A method as claimed in claim 35 for accelerating flowing time in a plant, which method comprises any of the following steps of:

- (I) causing or allowing transcription from a nucleic acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced in the plant such as to reduce FRI expression by an antisense mechanism;
- (II) causing or allowing transcription from a nucleic acid which is capable of delaying the flowering time and thereby extending a vegetative phase in the plant or part thereof such as to reduce FRI expression by co-suppression;

(III) use of a nucleic acid encoding a ribozyme specific for a nuclei acid obtainable from the FRI locus of a plant, which nucleic acid encodes a polypeptide which is capable of specifically altering the flowering time of a plant into which the nucleic acid is introduced.

Claim 38 (previously presented and currently withdrawn): A method as claimed in claim 37 wherein the plant is a soft fruit or maize.

Claim 39 (previously amended and currently withdrawn): A method as claimed in claim 35 which further comprises use of a nucleic acid capable of modulating VRN2 expression or FLC expression.

Claim 40 (previously presented and currently withdrawn): An isolated nucleic acid molecule which comprises a nucleotide sequence which encodes the promoter sequence obtainable from the FRI locus of a plant, or a derivative of said sequence.

Claim 41 (new): A host cell as claimed in claim 24, which is present in a plant.

Claim 42 (new): An isolated nucleic acid that specifically hybridizes under highly stringent conditions to the complement of the sequence set forth in SEQ ID NO: 2, wherein said nucleic acid encodes a polypeptide which delays flowering time of a plant into which the nucleic acid is introduced.